DOCUMENT RESUME

ED 193 330 TM 800 648

AUTHOR Davis, Patricia C.; And Others
TITLE Self-Perceptions on Sex-Typed Attributes and the Occupational Aspirations and Expectations of High School Females.
PUB DATE Apr 80
NOTE 32p.; Paper presented at the Annual Meeting of the American Educational Research Association (64th, Boston, MA, April 7-11, 1980).

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Career Choice; Expectation; *Females; *Grade 12; High Schools; Occupational Aspiration; Questionnaires; Self Concept Measures; *Self Esteem; *Sex Stereotypes
IDENTIFIERS Masculinity Femininity Variable; Occupational Status; Personal Attributes Questionnaire

ABSTRACT

Relationships among high school females' self-perceptions on sex-stereotypic attributes and their occupational aspirations and expectations were investigated. Two measures were administered to, and data were collected from, 200 randomly selected females in grade 12 from a large urban school district. Occupational choice was measured by two open-ended questions: (1) what job would you like to have?; and (2) what job do you think you will probably have? Four possible levels of sex-type included male-dominated aspiration and male-dominated expectation (MAE), male-dominated aspiration and female-dominated expectation (MAFE), female-dominated aspiration and female-dominated expectation (FAE), and female-dominated aspiration and male-dominated expectation (FAME). Sex-typed attributes were measured by means of six factors (emotionality; empathy; involvement; aggression; self-confidence; and need for approval) of a Personal Attributes Questionnaire (PAQ). Findings resulting from a two-way multivariate analysis of variance (MANOVA) included: (1) MAE was significantly different from MAFE and FAE in terms of need for approval, aggression, empathy and self confidence; and (2) no differences in self-perceptions on sex-stereotypic attributes were found between females with high prestige aspirations and expectations and those with low prestige aspirations and expectations. (RL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
P. Davis

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

ED193330

Self-Perceptions on Sex-Typed Attributes and the Occupational Aspirations and Expectations of High School Females

Patricia C. Davis
Houston Community College System

John P. Gaa
University of Houston

H. P. Baptiste, Jr.
University of Houston

Paper Presented at the American Educational Research Association, April, 1980, Boston, Ma.

TM 800648

Self-Perceptions on Sex-Typed Attributes and the Occupational Aspirations and Expectations of High School Females

Introduction

It has been noted that in general, theories of occupational choice have been formulated on the male occupational model. Consequently, most of the research in the area of occupational choice has applied only to white males (Osipow, 1968; Barnett & Baruch, 1976; Zuckerman, 1976). There is at present a small but growing body of literature on the occupational choice of females. Where females have been studied, it has been consistently shown that they are far more limited in their occupational choices than are males. This difference emerges early; elementary boys select two to three times as many occupations as girls, the majority of the girls choosing to be teachers or nurses (Looft, 1971; Hall, 1977; Siegal, 1973). Among high school students, girls continue to be more restrictive; secretary is added as a frequent choice (Barnett & Baruch, 1976; Berman, 1972; Douvan & Adelson, 1966; Marini & Greenberger, 1978). As Barnett and Baruch indicate, however, most studies of sex differences in occupational choice are rather dated.

Although prestige level, the social standing of occupations, has long been utilized as a difference measurement in studies of occupational choice, because of the various scales which have been utilized to measure prestige, and because of the "teacher-nurse syndrome," often no differences in the prestige level of girls' and boys' occupational choices have been found at either the elementary or the secondary levels (Barnett & Baruch, 1976). The fact that girls' aspirations tend to be clustered in the middle of the white-collar range may lead to these

JUL 2 9 1980

to these findings and obscure the fact that girls are not so likely to aspire to either the highest or the lowest prestige occupations.

This restricted range of girls' choices is not surprising considering the fact that both boys and girls tend to choose occupations in which their sex is dominant. The tendency to sex-type occupations and choose sex-typed occupations emerges early and continues through adulthood. Studies have found that children, adolescents, and adults all tend to categorize jobs along sex-typed lines and choose sex-typed jobs for themselves (Schlossberg and Goodman, 1976; Tibbits, 1975; Iglitzen, 1972; Albrecht, Bahr Chadwick, 1977; Tully, Stephan, & Chance, 1976; Marini & Greenberger, 1978).

In noting the inadequacies of current occupational theory in delineating the variables involved in the occupational choice of females, researchers and reviewers have pointed to the possible importance of sex-role stereotyping (Barnett & Baruch, 1976; Psathas, 1968; O'Leary, 1974; Zuckerman, 1976). Males and females in this society are socialized according to very different sex-role definitions. Behaviors, attitudes activities, and attributes all become sex-typed.

Research has shown that there is widespread agreement across age-group, sex, religion, and marital status regarding sex-stereotypic attributes, i.e., sex-typed personality characteristics. In general, males have been stereotypically described as more intelligent, aggressive, assertive, dominant, rational, adventurous, independent, and competitive than females; and females have been sterotypically described as more emotional, quiet, considerate, gentle, kind, warm, and understanding than males (Rosenkrantz et al., 1968; Broverman et al, 1972). Despite the many social changes which have taken place over the past 20-30 years, sex-role sterotypes have remained remarkably stable

(Fernberger, 1948; Sherriffs and Jerrett, 1953; Broverman et al., 1972; Spence et al., 1974). Research has as yet to clearly demonstrate the effect of such societal stereotypes on behavior. However, whether stereotypes are internalized or serve as external constraints, it appears that sex-role stereotypes often become sex-role standards which could conceivably influence a wide range of behaviors. As O'Leary states,

> Although the manner in which sex role stereotypes with their associated values influence the self concept of individuals has not been empirically documented, it is clear the prevalence of such consensually endorsed stereotypes, attributions of competence, and commitment will substantially affect women's self competence, and commitment will substantially affect women's self perceptions and influence behavioral responses based on these perceptions (1974, p. 814).

Occupational choice is one behavior which has been so closely linked with sex stereotypes that the relationship has usually been assumed. Sex stereotypic attributes have been related to occupational choice in two ways. First, the masculine stereotypic qualities are those associated with successful manipulation of the external environment and task accomplishment. These qualities, such as competitiveness, assertiveness, rationality, etc., are also those qualities which have traditionally been associated with general achievement orientation and success in the world of work (Angrist, 1975; Epstein 1970; O'Leary, 1974). Second, because occupations themselves are perceived in stereotypic terms, sex-typed occupations are seen as requiring those qualities stereotypically attributed to one sex or the other. For example, medicine, law, and engineering, traditionally male occupations, are perceived as occupations requiring a high level of intelligence, rationality, competitiveness, devotion to work, etc., qualities in which males are seen as superior, while teaching, nursing and social work are seen as requiring more nurturance, understanding, gentleness,and concern,areas in which females are regarded as superior(Duberman,1975).

It has been assumed that females who identify with the feminine sterotype would be more likely to choose a "feminine" occupation, and those who identify with the musculine stereotype would be more likely to choose a "masculine" occupation. Spence and Helmreich (1978), however, caution that such relationships cannot be assumed. They postulate a clear distinction between masculine and feminine sterotypic traits and sex-role behaviors. The failure to make this distinction "has probably encouraged the questionable assumption that there is a high correlation between these behaviors and other types of role behaviors. Knowledge of the degree to which an individual possesses or manifests masculine or feminine personality characteristics does not necessarily permit inferences about how sex-typed the individual is...in any other category of role-related behaviors" (p. 14). They suggest that the link between sex-typed attributes and role behaviors is likely to be weak because of the many factors such as situational variables and societal sex-role demands which affect a person's role behavior. However, they do not discount the possible influence of sex-sterotypes. In fact, they suggest that sex-typed attributes may "have broad transituational significance in both sexes and can be expected to influence the roles to which an individual is attracted, "such as choice of profession" (p. 114) (italics mine).

Those researchers who have investigated the relationship between sex sterotypes and occupational choice have found contradictory results. In an extensive review of the literature on females' attitudes and occupational choice, Zuckerman (1976) concludes that what has been shown is that women preparing for nontraditional occupations have more non-traditional attitudes towards themselves and the female role in general.

According to Zuckerman, some research has shown that women who aspire to nontraditional careers are less "feminine" on a variety of

measures. However, it is difficult to draw any conclusions from this data as there has been no consistency in the measurement of "masculinity" and "femininity." As Spence and Helmreich (1978) point out, the measures of masculinity and femininity are often comprised not only of items measuring attributes, but also of items measuring sex-role behaviors and sex-typed interests.

Because the measures also include sex-role behaviors and attitudes which might tend to inflate the relationship with another behavior (occupational choice, in this case), no real conclusions can be drawn concerning the relationship between sex-stereotypic attributes and occupational choice from these studies. In addition, most measures have assumed a bipolar conception of masculinity and feminity, a conception which as recently been criticized (Spence and Helmreich, 1978; Bem, 1974).

Although some studies have found some of the expected relationships between sex-typed attributes and occupational choice, the results have not been consistent, and no studies have been found which attempted to distinguish various dimensions of sex-typed attributes as they relate to occupational choice. The literature indicates that in those studies finding relationships between masculinity, femininity, and occupational choice, masculinity and femininity often are defined in terms of a wide variety of sex-role related behaviors, interests, and attitudes. It would actually be more appropriate to conclude that occupational choice has been shown to relate to sex-role ideology, which would include an array of sex-role correlates. Although the relationship between sex-typed attributes and occupational choice has often been assumed, and there have been some studies which have tended to support the assumption, research has as yet to clearly delineate the relationship.

Purpose of the Study

The general purpose of this study then was to help clarify the relationship between sex-typed attributes and occupational choice. The specific purpose of this study was to investigate the relationships among high school females' self-perceptions on sex-stereotypic attributes and their occupational aspirations and expectations. The study was exploratory in that it examined simultaneously a number of variables which had been examined either separately or not at all.

Occupational choice was examined in terms of occupational aspiration, the occupation the individual would really like to have, and occupational expectation, the occupation the individual actually expects to enter. Occupational aspirations and expectations in turn were examined in terms of occupational prestige (high prestige or low prestige) and occupational sex-type(male-dominated or female-dominated). Although these are the most frequently utilized perspectives from which the occupational choices of females have been investigated, they have not been investigated simultaneously.

It becomes particularly important to examine both aspirations and expectations in investigations related to occupational choices of girls because of the large discrepancies which have been found between their aspirations and expectations on both the sex-typed and prestige dimensions. Girls, more often than boys, expect to enter occupations both less prestigious and more sex-typed than the occupations they aspire to.

Procedures

Sample. Data was collected from 213 female twelfth-grade students from a large urban school district. These were all the female

students included in a total random sample of 400 twelfth-grade students. The ethnic breakdown of the sample was as follows: 90 (42.3%) Anglo, 97 (45.5%)Black, 71 (8%) Mexican-American, and 9 (4.2%) other.

Instrumentation. There were two measures utilized in the study. Occupational choice was measured by means of two open-ended questions, and sex-typed attributes, by means of the Spence et al,, (1974) Personal Attributes Questionnaire (PAQ).

Of the two open-ended questions utilized in this study, the first was used to elicit occupational aspiration, and the second, occupational expectation:

1) After you finish all of your schooling, if you could have any job you wanted, what job would you like to have; that is, your ideal job? (Be as specific as possible, for example, television announcer, elementary school teacher, homemaker).
2) What job do you think you will probably have; that is, your expected job? (Be as specific as possible).

Homemaker was used as an example because of the concern that the subjects might not consider homemaker as an option even though that might be what they actually wanted to do.

Occupational aspirations and expectations were coded according to prestige level and sex-type. If more than one occupation was listed, only the first was coded. Prestige level was coded according to the 1976 National Opinion Research Center (NORC) prestige scores computed for the 1960 Census detailed occupational categories (Siegel, 1971). The 1976 NORC codebook

adapted the 1960 Census scores to the 1970 U.S. Census occupational titles. Sex-type was determined by the percentage of males and females employed in the occupation according to the 1970 U.S. Census. Utilizing the 50% point suggested by the Marini and Greenberger (1978), occupational aspirations and expectations were dichotomized into male-dominated and female-dominated.

Homemaker which appears in neither the NORC scale nor the U.S. Census, was considered as 100% female-dominated and afforded a prestige score of 44. This figure was computed by Marini and Greenberger to correspond to the NORC scores and was derived from a method established by Bose (1973).

Of the 213 subjects, nine did not respond to one or both of the questions asking for an occupational choice and were eliminated from further analysis. Of the 408 responses remaining to be coded, 335 (82.1%) conformed without question to the occupational categories in the NORC codebook and the Census. The remaining 74 (18%) were coded by three independent coders. Twenty-seven (27) responses were placed in the same categories by all three coders. An additional 43 responses were coded into the same categories by at least two of the three coders. Four (4) responses were eliminated because they were too vague, unclear, or there was not agreement among at least two of the coders. Thus, 13 subjects were eliminated as a result of coding occupational aspiration and expectation, nine for nonresponse, and four for nonagreemnet among coders.

The personal Attributes Questionnaire (PAQ) (Spence et al., 1974, utilized as the measure of sex-typed attributes, was based on the work of Rosenkrantz et al., (1968). The Rosenkrantz Sex Role Stereotype Questionnaire (SRSQ) consists of 122 bipolar attributes suggested by college students as representing societal sex stereotypes. The items are each set up on a 60-

point scale with a verbal extreme at each pole (e.g., Dominant-Submissive). The PAQ is a shorter, machine-scored version of this instrument containing 55 items on the long form and 24 on the short form used in this study. The items are set up on a 5-point scale with verbal extremes at each end. Example:

Not at all artistic A.....B.....C.....D.....E very artistic.

There are three scales, M (masculinity), F (Femininity), and M-F (Masculinity-Femininity). For the short form, eight items were chosen for each scale on the basis of part-whole correlations between the items and the scales to which they belong. For a sample of college students, the correlations between the long and short forms were: .93 (M), .93 (F), and .91 (M-F). Cronbach alphas for the sort forms were: .85 (M), .82 (F), and .78 (M-F).

There are, however, some potential difficulties with the instrument. One is the scale which has been labeled Masculinity-Femininity (M-F). This scale includes both expressive and instrumental items which because they violate certain criteria established for the other two scales, were not included in the Masculine (M) or Feminine (F) scales. Although the developers believe that the items provide potentially useful information over and above that supplied by the M and F scales, the interpretation and full implications of the scale are not clear at this time.

A second potential difficulty is that a recent factor analytic study of the PAQ (Gaa, Liberman, and Edwards, 1979) has raised questions concerning the independence and nature of the M, F, and M-F scales. The factor analysis by Gaa, Liberman, and Edwards yielded six factors accounting for 45.8% of the variance and four primary factors labeled Empathy, Emotional, Aggressive, and Self-Confident, accounting for 40% of the variance. The investigators concluded that the factor analysis did not indicate the presence of independent masculine and feminine scales. These findings indicated that

careful examination of the instrument was warranted before the M, F, and M-F scales could be utilized as the measures of sex-typed attributes.

Design and Analysis

A two-way multivariate analysis of variance (MANOVA) design was employed to investigate the relationship between sex-typed attributes and occupational aspirations and expectations.

In the two-way analysis, one independent variable was Sex-Type of Occupational Aspirations and Expectations, and the other was Prestige Level of Occupational Aspirations and Expectations. Considering both aspirations and expectations, there were four possible levels of Sex-Type: (1) both male-dominated aspiration and male-dominated expectation, (2) male-dominated aspiration and female-dominated expectation, (3) both female-dominated aspiration and female-dominated expectation, (4) female-dominated aspiration and male-dominated expectation. It was anticipated that very few subjects would fall into the fourth level of Sex-Type, and the level would not, therefore, be utilized in the MANOVA.

Prestige level was also examined in terms of the discrepancy between occupational aspirations and expectations. As in the case of Sex-Type, there were four possible levels of the independent variable, Prestige Level: 1) high prestige aspiration and high prestige expectation, 2) high prestige aspiration, low prestige expectation, 3) low prestige aspiration, low prestige expectation, 4) low prestige aspiration, high prestice expectation. Because aspirations almost always exceed expectations in terms of prestige level, it was anticipated that the fourth level would not have sufficient cases to retain it in the study.

It was hypothesized that these two variables would independently

affect the dependent variable and, in addition, an interaction might occur. For example, a subject with male-dominated aspirations and expectations at a high prestige level may differ in terms of her self-perceptions on sex-stereotypic attributes from a subject with male-dominated aspirations and expectations at a low prestige level.

The dependent variables in the MANOVA were Sex-Stereotypic Attributes. As indicated previously, the PAQ, which was utilized in this study, measures sex-stereotypic attributes in terms of three scales. Because questions have recently been raised in regard to the PAQ, an initial analysis of the instrument was undertaken to determine the appropriateness of the M, F, and M-F scales for utilization in the study. First, the reliabilities of the M, F, and M-F scales were examined by means of Cronbach Alpha. Second, the instrument was factor-analyzed. If, indeed, the M, F, and M-F scales of the PAQ were the most appropriate for utilization in the study, the scale reliabilities should be satisfactory, and the factor analysis should indicate the existence of these three scales. If, however, the scales reliabilities were not satisfactory and the factor analysis yielded a different set of factors, it was determined that these factors would be utilized as the dependent variables in the MANOVA.

In the MANOVA, each main effect and the interaction were tested for significance utilizing a multivariate F-ratio at the .05 level of significance. Where significance occurred, post hoc analysis utilizing the discriminant function coefficients was performed to determine the exact source of the significance, i.e., the groups which were distinguished and the set(s) of attributes on which they differed (Stevens, 1972).

Findings

The Distribution of Subjects Across Levels of Sex-Type and Prestige

For the 200 cases which remained after those with missing data had been eliminated, 118 (59%) aspired to male-dominated occupations, whereas only 72 (38.5%) actually expected to enter male-dominated occupations. Conversely, 82 (41%) aspired to female-dominated occupations, but 123 (61.5%) expect to enter female-dominated occupations. Forty-five (22.5%) wished to enter male-dominated occupations, yet expect to enter female-dominated occupations. As anticipated, only four (4) subjects fell into the level representing female-dominated aspirations and male-dominated expectations. In order to maintain sufficient cell size, this level of Sex-Type was eliminated from the MANOVA.

Prestige Level of occupational aspirations and expectations was dichotomized into high prestige and low prestige at the prestige score of 51. This represented approximately the fiftieth precentile of aspiration scores and the sixtieth precentile of expectation scores. For occupational aspirations, 100 (50%) subjects fell on or below 51 on the prestige scale, and 100 (50%) fell above 51 on the prestige scale. For expectations, 121 (60.5%) fell on or below the prestige score of 51, and 79 (39.5%) fell above 51 on the prestige scale. As expected, there were only three (3) cases which fell in the level representing low prestige aspiration and high prestige expectation; these were eliminated from further analysis.

As illustrated by Table 1, when the subjects were distributed across the levels of prestige and sex-type, the two largest groups were: 1) subjects who have both high prestige aspirations and expectations and male-dominated aspirations and expectations, 2) subjects who have low prestige aspirations and expectations and female-dominated aspirations and expectations.

Table 1

The Distribution of Subjects by Sex-Type and Prestige Level of Occupational Aspirations and Expectations

		Sex-Type of Occupational Aspirations and Expectations							
		male-dom. asp./ male-dom. exp.		male-dom. asp/ female-dom. exp.		female-dom. asp./ female-dom. exp.		Total	
		n	%	n	%	n	%	n	%
Prestige Level of Occupational Aspirations and Expectations	high asp./ high exp.	42	21.8%	9	4.7%	24	12.4%	75	38.9%
	high asp./ low exp.	8	4.1%	11	5.7%	5	2.6%	24	12.4%
	low asp./ low exp.	22	11.4%	24	12.4%	118	24.9%	94	48.7%
	TOTAL	72	37.3%	44	22.8%	77	39.9%	193	100%

This is a function of the distribution of the male-dominated and female-dominated occupations across the prestige range, with the male-dominated occupations more likely to fall at the upper end of the prestige range, and the female-dominated more likely to fall at the lower end.

The small number of subjects (5) which fell into the cell representing both female-dominated aspirations and expectations and high prestige aspirations but low prestige expectations was noted at this point. This, too, is a function of the natural distribution of aspirations and expectations. A female who aspires to a female-dominated occupation is more likely to feel that she can attain that aspiration than one who aspires to a male-dominated occupation. If the factor analysis yielded more than four factors, sufficient cell size would not be reached for this one cell. In this case, the Prestige Level which contained that cell (i.e., high prestige aspirations, low prestige expectations) would necessarily be eliminated from the MANOVA.

Analysis of the Personal Attributes Questionnaire (PAQ)

Cronbach Alpha was computed for each of the scales yielding reliability coefficients of .72, .68, and .51 for the M,F, and M-F scales respectively. These were substantially lower than the .85, .82, and .78 reported by Spence and Helmreich. The low reliabilities of the M, F, and M-F scales for this population make interpretation of any relationship among the scales tenuous.

The factor analysis of the PAQ was undertaken to determine if for this population a truer set of dimensions of the instrument could be discovered than the M, F, and M-F scales into which the instrument had been divided. An initial factor analysis of the responses of 167 subjects was performed. These 167 subjects represented those who remained in the three

levels of each independent variable and those whose responses on the PAQ contained no missing data.

The initial factor analysis indicated the presence of seven factors with eigenvalues greater than one. Six of these were considered to be primary factors. Since the second level of prestige was not of sufficient size to allow for analysis employing more than four factors, it was determined that a subsequent analysis would be undertaken eliminating the 24 cases in the second level of Prestige (i.e., high prestige aspirations, low prestige expectations).

A second factor analysis of the PAQ was performed utilizing the remaining 146 subjects. This yielded the same seven factors. Examination of the factors indicated the seventh factor to be unitary and accounted for little additional variance. In addition, there was a leveling of the variance accounted for at this point. Utilizing this combination of criteria, the first six factors were retained for utilization by the study (Rummel, 1970). These six factors accounted for 56.3% of the variance.

An analysis of the factors was made, synthesizing the items with the large structure coefficients. An arbitrary criteria of .30 was utilized to identify items contributing to the factor. Four of the six factors extracted by the analysis yielded factors similar in nature to those found by Gaa et al. (1979). For this reason, the labels chosen for the factors were those utilized in the previous study. They were: Factor I, Emotionality; Factor II, Empathy (reversed in the Gaa et al. study); Factor IV, Aggressiveness; Factor V, Self-Confidence. The two additional factors extracted in this study were Factor III, labeled Involvement, and Factor VI, labeled Need for Approval. Table 2 indicates the composition of the six factors.

Table 2

PAQ FACTORS

Factor	PAQ SCALE ON WHICH ITEMS APPEAR	ITEMS	STRUCTURE COEFFICIENT
I			
Emotionality	M-F	Feelings easily hurt (F)*	.791
	M-F	Very strong need for security (F)*	.736
	F	Very emotional	.654
	M-F	Cries very easily (F) *	.642
	M-F	Excitable in a major crisis (F)*	.318
	M-F	Needful of others approval (F)*	.315
II			
Empathy	F	Very understanding of others	.821
	F	Very kind	.649
	F	Very warm relation to others	.629
	F	Very aware of feelings of others	.494
	F	Very helpful to others	.492
	M	Stands up well under pressure	.404
III			
Involvement	F	Able to devote self to others	.753
	M-F	Excitable in a major crisis (F)*	.651
	F	Very gentle	.616
	F	Very kind	.453
	F	Very helpful to others	.402
	F	Aware of feelings of others	.339
	M	Feels superior	.385
IV			
Aggression	M-F	Very aggressive (M)*	.817
	M-F	Very dominant (M)*	.682
	M	Very independent	.586
	M	Active	.374
	M	Competitive	.310
V			
Self-Confidence	M	Very self-confident	.737
	M	Never gives up easily	.677
	M	Feels very superior	.609
	M	Stands up well under pressure	.583
	M	Very active	.459
	M	Very competitive	.454
	F	Aware of feeling of others	.324
	M	Has difficulty making decisions (F)*	-.336
VI			
Need for Approval	M-F	Needful of others approval (F)*	.657
	M-F	Wordly (M)*	.534
	M	Has difficulty making decisions (F)*	.421
	M	Very independent	-.400
	M	Competitive	.334

* indicates the pole represented by that response extreme.

In light of the relatively low reliabilities of the M,F, and M-F scales and because of the greater amount of variance that would be accounted for by utilizing the factors, it was determined that for this sample, the six factors of the PAQ provided the most appropriate scale configuration for utilization as a set of dependent variables.

Results of the MANOVA. The MANOVA was performed utilizing the six factors of the PAQ as the dependent variables and the three levels of Sex-Type and two levels of Prestige as the independent variables. The MANOVA yielded a significant main effect for Sex-Type. For Sex-Type, a multivariate F-ratio of 1.9638 with 12 and 270 degrees of freedom was found which was significant at the .05 level. The MANOVA indicated that on the set of six factors of the PAQ (Emotionality, Empathy, Involvement, Aggressiveness, Self-Confidence, and Need for Approval) there were significant differences among the three levels of Sex-Type. However, post hoc analysis was necessary in order to determine which of the three groups differed and on which of the six factors they differed. The MANOVA yielded no significant main effect for Prestige Level and no significant interaction between the independent variables, Sex-Type and Prestige Level.

Post Hoc Analyses. Post hoc analysis was performed first, to ascertain which group or groups (level of the independent variable) was significantly different from the others and, second, which factors from the PAQ contributed to the significant differences in the levels of Sex-Type. First, a discriminant analysis was run (Stevens, 1972). This analysis yielded only one significant discriminant function. This indicated in terms of the six factors, one group was significantly different from the other two for the main effect of Sex-Type.

In order to determine which level of Sex-Type was distinguished, the centroids of each type were found, and confidence intervals were constructed around the centroids. Table 3 presents the centroids and confidence intervals for each level of Sex-Type.

Table 3

Centroids and Confidence Intervals for the 3 Levels of Sex-Type

Sex-Type	Centroids	Confidence Intervals
Male-dominated aspirations/ Male-dominated expectations	-.395	± .249
Male-dominated aspirations/ Female-dominated expectations	.178	± .364
Female-dominated aspirations/ Female-dominated expectations	.313	± .273

Constructing the confidence intervals around the centroids determined that the confidence interval for the level of Sex-Type, male-dominated aspirations and male-dominated expectations, essentially did not overlap the confidence intervals for the other two levels of Sex-Type. The other two levels overlapped considerably. Therefore, it was determined that those high school females with male-dominated aspirations and expectations were significantly different in terms of their self-perceptions on sex-stereotypic attributes as measured by the six factors of the PAQ from those high school females with male-dominated aspirations and female-dominated expectations and those with female-dominated aspirations and expectations.

It should be noted that the centroid of the second level, male-dominated aspirations, female-dominated expectations, fell between the other two groups, and that the range of the confidence interval for this type was very large in comparison to the other two.

Once it was determined which group was distinguished from the other two, further analysis was undertaken to determine which factors contributed to this significant differentiation. The discriminant function weights from the discriminant analysis were transformed into reliability coefficients which, when squared, indicated the amount of variance each factor accounted for in distinguishing the groups. Table 4 presents the reliability coefficients and the percentage of variance accounted for by each factor in distinguishing among the groups.

As indicated by Table 4, four of the six factors were major contributors to determining differences between the levels of Sex-Type. These were: Empathy, Aggression, Self-Confidence, and Need for Approval. There were two factors which were arrayed positively on the function, Empathy, and Need for Approval, and two which were arrayed negatively, Aggression and Self-Confidence. Of these, Need for Approval accounted for the largest amount of variance, 37.3%. Emotionality and Involvement made essentially no contribution to determining the differences between the levels of Sex-Type.

The discriminant coefficients indicated that of the four factors, Need for Approval and Empathy were positive while Aggression and Self-Confidence were negative. This arrangement of signs indicates that Need for Approval and Empathy separate the groups in an opposite direction from Aggression and Self-Confidence.

Arraying the means of the three levels of Sex-Type on the function, it was determined that the high school females with male-dominated

aspirations and expectations tended to have higher scores on the factors labeled Aggresion and Self-confidence and low on Need for Approval and Empathy. Conversely, the high school females with male-dominated aspirations and female-dominated expectations and those with female-dominated aspirations and female-dominated expectations taken together tended to score high on Need for Approval and Empathy and low on Aggression and Self-Confidence.

Table 4

Reliability Coefficients and Per Cent of Variance Accounted for by the Six Factors

FACTOR	Reliability Coefficient	Per Cent Variance
1. Emotionality	.0313	.1%
2. Empathy	.4058	16.5%
3. Involvement	.0570	.3%
4. Aggression	-.5209	27.1%
5. Self-Confidence	-.3498	12.2%
6. Need for Approval	.6105	37.3%

Summary of the Findings

The major findings of the study were:

1) A factor analysis of the PAQ revealed six primary factors, labeled Emotionality, Empathy, Involvement, Aggression, Self-Confidence, and Need for Approval supporting previous research and indicating the instrument to be more complex than suggested by the developers.
2) High school females having both male-dominated occupational aspirations and male-dominated occupational expectations were found to be significantly different in terms of their PAQ factor scores from those with

male-dominated aspirations and female-dominated expectations and those with both female-dominated aspirations and expectations.

3) Differences between these groups were found to exist on four of the six factors of the PAQ. These were: Need for Approval, Aggression, Empathy, and Self-Confidence.

4) The factor scores were generally split along sex-stereotypic lines, those with male-dominated occupational expectations scoring high on the two factors on which predominantly male sterotypic items loaded the highest and low on those factors on which predominantly female stereotypic items loaded the highest. The opposite occurred for those with female-dominated expectations.

5) There were no differences in self-perceptions on sex-stereotypic attributes found between those females with high prestige aspirations and expectations and those with low prestige aspirations and expectations.

6) There was no interaction found between sex-type and prestige level of occupational aspirations and expectations in terms of the six factors of the PAQ.

Discussion

The finding that for the high school females in this study there were significant differences in their self-perceptions on sex-stereotypic attributes associated with differences in the sex-type of their occupational choices supports the hypothesis that for females sex-stereotypes function as an important variable in occupational choice. The findings indicate that high school girls who expect to enter male-dominated occupations perceive themselves as less stereotypic on certain dimensions of a measure of sex-stereotypic personality attributes than do those who expect to enter female-dominated occupations.

The study did not find that the entire constellation of sex-stereotypic attributes measured by the PAQ were associated with occupational choice. Of the six factors extracted from the measure, only four were found to contribute to the differentiation of the subjects according to the sex-type of their occupational aspirations and expectations. Of these, Need for Approval accounted for the greatest amount of variance, and Aggression accounted for the second largest amount of variance. It should be recalled that Need for Approval and Aggression separated the subjects according to their sex-type in opposite directions. Need for Approval accounted for over twice the variance accounted for by Empathy, the other factor which was positively arrayed on the function, and Aggression accounted for over twice as much variance as Self-Confidence, the other negatively arrayed factor.

In examining the relationships amoung the factors differentiating the subjects with male-dominated aspirations and expectations from the other two groups, it appears that at least to some extent, a bipolar interpretation of the factors is warranted. Factors IV, Aggression, and V, Self-Confidence are negatively arrayed on the function, while Factor II, Empathy is positively arrayed. Aggression and Self-Confidence primarily reflect qualities which have been viewed as stereotypically masculine qualities. Empathy, on the other hand, reflects the more sterotypically feminine qualities. This is not to say that these factors always operate in a bipolar manner, but rather as they appear in relationship to sex-type of occupational choice, this seems to be the case. Those high school females who had male-dominated occupational aspirations and expectations perceived themselves as possessing certain attributes identified as masculine sex-stereotypic attributes to a greater degree and certain attributes identified as feminine sex-sterotypic attributes to a lesser degree than did those high school females with female-dominated expectations.

It should be noted that Factor VI, Need for Approval, accounted for the most variance in distinguishing among the occupational types. Need for Approval, although comprised of sex-stereotypic items, does not appear to reflect a factor which could be characterized as "masculine" or "feminine." It is hypothesized that what this factor does reflect is a high concern with social acceptability.

Need for Approval appears to be the most complex of the factors. Of the five items which display the highest structure coefficients on the factor, two are M-F scale items and three are M scale items. Two of the M scale items, however, are loaded toward the feminine pole as is "needful of others' approval," an M-F scale item. "Worldly," an M-F scale item represents the masculine pole, as does "competitive," an M scale item. Because of this pattern, the factor cannot be characterized as either an expressive or an instrumental factor.

This factor does, however, seem to imply a lack of certain instrumental qualities: "independent" and "makes decisions easily" both load negatively on the factor. The negative loading of "independent" and the high positive loading of "needful of others' approval" seem characteristic of an emotional dependence on others. The fact that "worldly" appears high on this factor and "competitive" displays a moderately high structure coefficient might further indicate a need for external recognition and approval. Competitiveness has stereotypically been considered a masculine characteristic. However, its moderately high loading on this factor helps both to clarify the meaning of the factor and to explain the differences between the groups. It is suggested that competitiveness on this factor is associated both with a need for

recognition and with the approval which can result only from entering an occupation regarded as socially acceptable.

Stein and Bailey (1975) suggest that females have achievement needs equal to those of males, yet are constrained to express them in socially acceptable modes. That Need for Approval accounts for the greatest amount of variance in separating those who expect to enter male-dominated occupations from not only those who want and expect to enter female-dominated occupations, but also from those who have an interest in male-dominated occupations but who expect to enter female-dominated occupations, seems to imply that either the perceived social consequences of a nontraditional occupational choice or anticipated social approval for a traditional choice is a salient factor for certain females.

This interpretation of Factor VI, Need for Approval, also helps explain why those with both male-dominated aspirations and expectations were distinguished from the other occupational types. The fact that this type was differentiated indicates that the factor scores were more related to expectations than aspirations. It would seem that if self-perceptions were related to occupational choice, those perceptions would be more closely related to aspirations than expectations; expectations presumably would more likely reflect a number of external barriers. However, Need for Approval, the factor which accounts for the most variance in separating the groups, does seem to reflect a concern with external approval. It appears to be somewhat different from the other factors which describe personality characteristics often stereotypically associated with certain occupations.

male-dominated aspirations and expectations was significantly different from the others, the factor centroid of those with male-dominated aspirations and female-dominated expectations fell between the centroids of the other two types. The difference was not significant, but indicates a tendency which may imply an underlying continuum that could be delineated with more precise instrumentation and group definition. In addition, the factor means indicated that those with male-dominated aspirations and female-dominated expectations do not behave as consistently on the factors as do those with female-dominated aspirations and expectations. This is further evidence that those with male-dominated aspirations but female-dominated expectations may constitute a uniquely definable group.

Although sex-type was found to be related to occupational aspirations and expectations, the expected relationship between prestige level and sex-stereotypic attributes was not found, nor was there an interaction between sex-type and prestige level. There are several possible explanations for these results. It was anticipated that a number of levels of prestige could be utilized in the study. However, because of the distribution of the occupational aspirations and expectations for this sample in regard to the independent variable sex-type, this was not possible. It may be that the dichotomization of the data proved to be too gross to allow differences in terms of prestige to be observed.

On the other hand, it is possible that in terms of the relationship between sex-stereotypic attributes and occupational choice, it is sex-type and not prestige that is the salient factor. The point has been made that females do not tend to aspire to the highest prestige occupations. It has been assumed that these high prestige occupations are associated with attributes which females have been socialized to feel are inappropriate for them.

However, the aspect of these high prestige occupations which makes them "inappropriate" could very well be their sex-type rather than solely their prestige level. Previous studies which have found relationships between prestige level and sex-stereotypes have not examined sex-type at the same time. If prestige were operating independently in the relationship between sex-typed attributes and occupational choice, it should have been indicated by the interaction.

In addition, it is interesting to note the difference in the nature of the female-dominated occupations which appeared at each prestige level. The dichotomy separates the high prestige female-dominated occupations such as teacher and nurse from the lower prestige female-dominated occupations such as secretary, bookkeeper, and telephone operator. It has been hypothesized that the occupations such as teacher and nurse are associated with the nurturant, expressive attributes. However, there was no interaction between Prestige and sex-type to support this hypothesis. This suggests that sex-stereotypic attributes may not be associated with the perceived qualities of persons in the occupations so much as they are associated with appropriately fulfilling current sex-role expectations by choosing an occupation dominated by one's sex.

References

Albrecht, S.L., Bahr, H.M., Chadwick, B.A. Public stereotyping of sex roles, personality characteristics, and occupations. Sociology and Social Research, 1977, 61, 223-240.

Angrist, S.S., & Almquist, E.M. Careers and contingencies: How college women juggle with gender. New York: Dunellen, 1975.

Barnett, R.C., & Baruch, G.K. Empirical literature on occupational and educational aspirations and expectations: A review (1975) JSAS Catalog of Selected Documents in Psychology, 1976, 6, 1. (Ms. No. 1256)

Bem, S.L. The measurement of psychological androgeny. Journal of Consulting and Clinical Psychology, 1974, 42 155-162.

Berman, Y. Occupational aspirations of 545 female high school seniors. Journal of Vocational Behavior, 1972, 2, 173-177.

Bose, C.E. Jobs and gender: Sex and occupational prestige. Unpublished doctoral dissertation, Johns Hopkins University, 1973.

Broverman, I.K., Vogel, S.R., Broverman, D.K., Clarkson, F.E., & Rosenkrantz, P.S. Sex-role stereotypes: A current appraisal. Journal of Social Issues,1972, 28, 59-78.

Douvan, E. & Adelson, J. The adolescent experience. New York:, Wiley, 1966.

Duberman, L. Gender and sex in society. New York: Praeger, 1975.

Epstein, C.F. Woman's place: Options and limits in professional careers. Berkley: University of California Press, 1970.

Fernberger, S.W. Persistence of stereotypes concerning sex differences. Journal of Abnormal and Social Psychology, 1948, 43, 97-101.

Gaa, J.P., Liberman, D., & Edwards, T.A. A comparative factor analysis of the Bem sex role inventory and the personal attributes questionnaire. Journal of Clinical Psychology, 1979, 35, 592-598.

Hall, C. Career aspirations of elementary school children. Unpublished doctoral dissertation, University of Houston, 1977.

Iglitzen, L.B. A child's eye view of sex roles. Today's Education, 1972, 61, 23-25.

Looft, W.R. Sex differences in expression of vocational aspirations of elementary school children. Developmental Psychology, 1971, 5, 366.

Marini, M.M., & Greenberger, E. Sex differences in occupational aspirations and expectations. Sociology of Work and Occupations, 1978, 5, 147-178.

National Opinion Research Center. National data program for the social sciences: Codebook. University of Chicago, 1976.

O'Leary, V.E. Some attitudinal barriers to occupational aspirations in women. Psychological Bulletin, 1974, 81, 809-826.

Osipow, S. Theories of career development. New York: Appleton-Century-Crofts, 1968.

Psathas, G. Toward a theory of occupational choice for women. Sociology and Social Research, 1968, 52, 253-268.

Rosenkrantz, P., Bee, H., Vogel, S., Broverman, I., & Broverman, D. Sex-role stereotypes and self-concepts in college students. Journal of Consulting and Clinical Psychology,1968, 32, 287-295.

Rummel, R. J., Applied factor analysis. Chicago: Northwestern University Press, 1970.

Schlossberg, N.K., & Goodman, J.A. Woman's place: Children's sex-stereotyping of occupations. Vocational Guidance Quarterly, 1972, 20, 266-270.

Shepard, W.O., & Hess, D.T. Attitudes in four age groups toward sex role division in adult occupations and activities. Journal of Vocational Behavior, 1975, 6, 27-39.

Sherriffs, A.C., & Jarrett, R.F. Sex differences in attitudes about sex differences. Journal of Psychology, 1953, 35 161-168.

Shiner, E.H. Sexual Stereotypes of occupations. Journal of Vocational Behavior, 1975, 7, 99-111.

Siegal, C.L.F. Sex differences in occupational choices of second graders. Journal of Vocational Behavior, 1973, 3, 15-19.

Siegel, P.S. Prestige in the American occupational structure. Unpublished doctoral dissertation, University of Chicago, 1971.

Spence, J. T., Helmreich, R., & Stapp, J. The personal attributes questionnaire: A measure of sex role stereotypes and masculinity-femininity. JSAS Catalog of Selected Documents in Psychology, 1874, 4, 43. (Ms. No. 617)

Spence, J.T., & Helmreich, R.L. Masculinity & femininity: Their psychological dimensions, correlates, and antecedents. Austin: University of Texas Press, 1978.

Stein, A., & Bailey, M.M. The socialization of achievement motivation in females. In M.T. Mednick, S.S. Tangri, & L. W. Hoffman (Eds.) Women and Achievement. Washington, D.C.: Hemisphere, 1975.

Stevens, J.P. Four methods of analyzing between variation for the K-group MANOVA problem. Multivariate Behavioral Research, 1972, 7, 499-522.

Tibbits, S.L. Sex role stereotyping in the lower grades: Part of the solution. Journal of Vocational Behavior, 1975, 6, 255-261.

Tully, J.C., Stephan, C., & Chance, B.J. The status and sex-typed dimensions of occupational aspirations in young adolescents. Social Science Quarterly, 1976, 56, 638-649.

U.S. Bureau of the Census. 1970 Census of the population, subject reports: Occupational characteristics, PC (2)-7A. Washington, D.C.: U.S. Government Printing Office.

Zuckerman, D.M. Challenging the traditional female role: An exploration of women's attitudes and career aspirations. Unpublished doctoral dissertation, Ohio State University, 1976.